

TITLE OF THE INVENTION  
GRILL BRUSH AND GRILL CLEANING SYSTEM

5 CROSS REFERENCE TO RELATED APPLICATIONS

Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR  
DEVELOPMENT

10 Not Applicable

BACKGROUND OF THE INVENTION

The present invention pertains to grill brushes for cleaning grill grates such as the grates of gas fired barbecue  
15 grills and a cleaning system employing a grate and grill brush specially configured for use therewith.

The use of brushes and scrapers for the cleaning of grill grates of gas grills is well known. Typically, grill brushes have a head portion and a handle portion. Grill brushes known  
20 in the art typically have metallic bristles which are generally all of a constant length and form a generally planar abrasive surface. This bristle configuration permits the top surface of the grill to be scrubbed with the grill brush but does not facilitate the cleaning of the sides of the grill grate bars.  
25 With known grill brushes it is therefore difficult to remove accumulated deposits from the sides of the grate bars without significant effort.

It would therefore be desirable to have a grill brush that more effectively removes deposits and grease from the sides of  
30 the grate bars of a grill grate while also removing deposits from the top surface of the grate.

## BRIEF SUMMARY OF THE INVENTION

In accordance with the present invention an improved grill brush is disclosed. The brush has a head portion and a handle portion. Metallic bristles are mounted in and extend from a surface of the head portion. In one embodiment the bristles are arranged in generally parallel rows that extend from a surface of the head portion by first and second heights, wherein the second height is less than the first height. When the bristles of the grill brush are urged against the grill grate for the purpose of cleaning the grate, the longer bristles extend into the openings between parallel spaced grill grate bars and scrub the sides of the grate bars while the shorter bristles scrub the top surface of the bars of the grill grate. The width of the rows of narrow bristles may be selected to correspond generally to the width of the grill grate bar with which the grill brush is intended to be used. Similarly, the width of the rows of longer bristles may be specified to correspond to the spacing between the grill grate bars. The specific width of the rows of the shorter bristles and the longer bristles may be specified to provide effective cleaning of different grill grate designs.

In another embodiment of the invention, the contour of the top surface of the bristles is specified to correspond to the contour formed by the grate to promote effective scrubbing and removal of deposits from the top surface and accessible side surfaces of the grate.

Other features and advantages of the presently disclosed grill brush and grill cleaning system will be apparent to those of ordinary skill in the art from the Detailed Description of the Invention that follows.

# BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

The invention will be more fully understood by reference to the following Detailed Description of the Invention in conjunction with the Drawings of which:

5        Fig. 1a is a side view of a prior art grill brush;

      Fig. 1b is a front view of the prior art grill brush of Fig. 1a;

      Fig. 2a is a side view of an exemplary grill brush in accordance with the present invention;

10       Fig. 2b is a front view of the grill brush of Fig. 2a;

      Fig. 3a is a perspective view of a grill grate employing round grate bars for use in a cleaning system with the grill brush depicted in Figs. 2a and 2b ;

      Fig. 3b is a perspective view of a grill grate including  
15       grate bars having a generally planar supporting surface and angled side surfaces for use in a cleaning system with the grill brush depicted in Figs. 2a and 2b;

      Fig. 4a is a partial front view of the grill brush of Figs. 2a and 2b with the grill grate of Fig. 3a shown in cross  
20       section and depicting the grill brush in a scrubbing position with respect to the grill grate;

      Fig. 4b is a partial front view of the grill brush of Figs. 2a and 2b with the grill grate of Fig. 3b shown in cross  
25       section and depicting the grill brush in a scrubbing position with respect to the grill grate;

      Fig. 5 is a partial front view of another embodiment of a grill brush in accordance with the present invention in which the ends of the bristles define a contoured non-planar cross  
30       section that generally corresponds to the contour of a grill grate with which the grill brush is intended to be used;

      Fig. 6 is a partial bottom view of a grill brush in accordance with the present invention depicting recesses within

the head portion of the grill brush of Figs. 2a and 2b sized to receive clusters of bristles;

Fig. 7 is a side view of a bristle cluster assembly for mounting within the recesses depicted in Fig. 6; and

5 Fig. 8 is a side view of a grill brush in accordance with the present invention that further includes a support member, an abrasive pad mounted to the support member and a metallic scraper extending from the head portion.

#### 10 DETAILED DESCRIPTION OF THE INVENTION

In accordance with the present invention an improved grill brush and a grill brush cleaning system is disclosed. The presently disclosed grill brush and cleaning system provides for more effective removal of deposits and grease that accumulate  
15 during use on the grates of grills, such as gas barbecue grills.

A prior art grill brush is depicted schematically in Figs 1a and 1b. Referring to Figs. 1a and 1b, the grill brush 10 includes a head portion 12 a handle portion 14 and a plurality  
20 of metallic bristles 16 mounted to the head portion 12. The handle portion 14 may be include a thermoplastic or rubber covering (not shown) for added comfort. In one embodiment, the handle portion 14 is angled between 120 - 160 degrees with respect to the head portion 12. As illustrated in Figs. 1a and  
25 1b, the metallic bristles 16 are of a generally constant length and the ends of the bristles lie form a cleaning surface that is generally planar. Known prior art grill brushes typically are fabricated of wood or plastic.

Referring to Figs. 2a and 2b, an grill brush in accordance  
30 with the present invention is shown. The grill brush 20 includes a head portion 22, a handle portion 24 and metallic bristles 26 that are mounted within the head portion and extend

from the bottom surface thereof. As illustrated in Fig. 2b, the metallic bristles 26 are arranged in generally parallel rows of having first and second different heights. More specifically, the metallic bristles 26 include longer bristles 26a which are intended to extend between the spaces formed between adjacent parallel grate bars and shorter bristles 26b which are intended to scrape and clean the top surface of the grill grate.

Grill grates are provided in various forms. One conventional grill grate 30 includes generally circular rods 32 maintained in position by welded cross members 34 as illustrated in Fig. 3a. Additionally, another conventional grill grate 40 has grate bars 42 formed with a generally planar top surface 44 and angled side surfaces 46. The grate bars 40 are maintained in position by welded cross members 48.

The use of the presently disclosed grill brush for the cleaning of grill grates is illustrated in Figs. 4a and 4b. More specifically, the grill brush 20 is positioned over the circular rods 32 such that the rods 30 are urged into the recesses formed between the rows of different height and bristles 26. The bristles 26 of the grill brush 20 may then be urged against the circular rods 32 while the grill brush is moved back-and-forth along the length of the circular rods to clean the rods 32 and remove deposits therefrom. The shorter bristles 26b are formed in generally parallel rows of a specified width W1 and deform to provide scrubbing on the curved upper surface of the circular rods 32. The longer bristles 26a are provided in rows of width W2 and are generally parallel to the other rows of bristles. The longer bristles 26a extend between the openings formed by the parallel circular rods 32 located generally on spaced centerlines C1 so as to provide more effective scrubbing of the sides of the rods 32 than is readily achieved using conventional grill brushes. It should be

appreciated that the disclosed brush may be used with grill  
grates having centerlines corresponding to the centerlines  
between shorter bristles 26b rows or with grates having different  
centerline spacings.

5           Similarly, referring to Fig. 4b, the presently disclosed  
grill brush 20 may be employed to effectively clean a grill  
grate of a type depicted in Fig. 3b with grates spaced on  
centerlines C2. Referring to Fig. 4b, the grill brush 20 is  
disposed over the grate bars 42 with the rows of longer bristles  
10 26a having a width W4 such that the longer bristles deform and  
extending into the openings formed between the grate bars 42.  
The shorter bristles 26b are arranged in rows of width W3 so as  
to provide effective cleaning of the top surface of the grate  
bars 42. It will be appreciated that the bristles 26 will  
15 deform when urged against the grate bars 42. As indicated  
above, the bristles 26 of the grill brush 20 may be urged  
against the grate bars while the grill brush 20 is moved back-  
and-forth along at least a portion of the length of the grate  
bars 42 to clean the grate bars 42 and remove deposits  
20 therefrom.

In an improved cleaning system, the grill brush and the  
grate are especially adapted for use with one another. More  
specifically, referring to Figs. 4a and 4b, the narrow rows or  
narrow bristles 26b may be spaced on centerlines that correspond  
25 to the centerlines of the circular rods 32 or the grate bars 42  
and may have a width specified so as to generally conform to the  
top surface of the respective grate. In the case of the  
circular rods 32 the width of the narrow bristle rows may be  
slightly less than the diameter of the circular rods 32 so that  
30 cleaning of the rods 32 will be achieved with deformation of the  
bristles 26 when urged into contact with the rods 32.  
Similarly, referring to Fig. 4b, the width of the narrow rows of

bristles 26b may be specified so as to generally correspond to the width of the top surface 44 of the grate bars 42. The width of rows of the longer bristles 26a specified to generally correspond to the width of the spacing between the top surfaces  
5 44 of the grate bars 42. The longer bristles 26a will thus deform when urged into the openings between the grate bars 42 and effectively scrape deposits from the sides 46 of the respective grate bars 42.

In another embodiment of the invention illustrated in Fig.  
10 5, the contour of the bristles in cross-section is specified to generally correspond to the contour of the cross-section of the grate to be cleaned. More specifically, referring to Fig. 5 a cross-section of a grill brush 50 is shown positioned above a grate of the type depicted in Fig. 3b. The grill brush 50  
15 includes a head portion 52 with bristles 54 mounted in and extending from the head portion 52. The bristles 54 have a contour that generally corresponds to the cross-section of the grate contour so that the bristles 54 conform to the grate contour when urged into contact therewith to provide effective  
20 scrubbing of the top and side surfaces of the grate bars.

The bristles in the grill brushes herein described may be fabricated of a metallic material such as brass or stainless steel. Given that grill brushes are often used outdoors, it is preferable that the bristles be fabricated of a material that  
25 will not rust such as brass or stainless steel. While the illustrated embodiment is described in terms of the use of metallic bristles, it should be appreciated that any bristles that are suitably stiff and resilient may be employed, including non-metallic bristles.

30 The body of the grill brush may be fabricated as an integral structure of wood or plastic or any other suitable material. Alternatively, the handle may be fabricated

separately from the head portion of the grill brush and may be mounted thereto.

The bristles may be mounted in a head portion 60 of a grill brush in preformed recesses 62 depicted in Fig. 6, or  
5 alternatively, the bristles may be secured within a molded head portion via an insert molding process. More specifically, in one known process used for the mounting of bristles in grill brushes, U-shaped bristles 70 are passed through an eye member 72 (see Fig. 7) and the eye member 72 is forced into a preformed  
10 recess 62 within the head portion 60 to securely retain the bristles within the head portion 62 as a plurality of tufts of bristles. The lengths of the U-shaped bristles in the presently disclosed invention are specified so as to provide the desired non-planar contour of the bristle surface to achieve effective  
15 cleaning of a grill grate. Thus, the bristles depicted schemematically in Figs. 2, 4 and 5 may comprise tufts of bristles that have end which provide a surface having the above-described grill cleaning profiles. Additionally, while Fig. 7 depicts an eye member 72 that is used to secure the u-shaped  
20 bristles within the recesses 62 of the head portion 60, the u-shaped bristles may be secured within the head portion 60 with any curved or straight retaining member which is sized to be press fit into a recess 62 after insertion of the u-shaped bristles to captively retain the bristles within the head  
25 portion 60. The retaining member may be metallic or any other suitable material.

As illustrated in Fig. 8, a head portion 80 may include an additional support member 82 having an abrasive pad 84 mounted thereto. Moreover, the head portion 80 of a grill brush in  
30 accordance with the present invention may have a metallic scraper 86 mounted to the front of the head portion 80 opposite the handle 78 to permit more aggressive scraping of deposits on



the surfaces of a grill grate. It should be appreciated that an abrasive pad 84 and a scraper 86 may be included with any of the embodiments herein disclosed.

5        Though the handle 78 is shown in Fig. 8 as extending from  
the head portion 80 in the illustrated embodiments, it should be  
appreciated that the grill brush may be fabricated such that the  
handle 78 extends from or is coupled to the abrasive pad  
supporting member 82 or the supporting structure between the  
head portion 80 and the abrasive pad supporting member 82. In  
10   one embodiment, the handle 78 position is configured so as to  
form an angle between a plane passing generally through the ends  
of the bristles and a line passing generally longitudinally  
through the handle and additionally, to form an angle between a  
plane passing generally through the exposed surface of the  
15   abrasive pad and the line passing generally longitudinally  
through the handle to facilitate ease of use of the grill brush  
when employing either the bristles or the abrasive pad for grill  
cleaning.

It will further be apparent to those of ordinary skill in  
20   the art that that variations of and modifications to the above  
described grill brush and grill cleaning system may be made  
without departing from the inventive concepts disclosed herein.  
Accordingly, the invention should not be viewed as limited  
except by the scope and spirit of the appended claims.

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